



VIRTUAL POLYMER  
COMPOUNDS, LLC

Specifications “Enduro” Model 100 Fiberglass Enclosure

**Note to User** These specifications are provided to aid the Engineer in the design and complete specification of a Fiberglass Shelter. Proper selection and use of any structure requires the services of a Professional Engineer. These documents are not to be used in lieu of the services of a design professional. The *italicized* text indicates a need to provide information specific to the proposed use. Consult the VPC engineering staff for assistance in special design and/or equipment.

**Product:** Model 100 Fiberglass Insulated Equipment Enclosure  
**Project:** *(Insert Project Name)*  
**Manufactured By:** Virtual Polymer Compounds, LLC

**PRODUCT SPECIFICATION**  
**“ENDURO” MODEL 100 FIBERGLASS INSULATED EQUIPMENT ENCLOSURE**

**PART ONE: GENERAL INFORMATION**

- 1.01 Furnish *(insert number required)* fiberglass composite insulated enclosure that measures 37 3/4 inches in length by 37 3/4 inches in width and 50 inches in height.
- 1.02 Specification section that may relate to this work:  
A. Section 03300 - Cast in Place Concrete  
B. Section *(insert related specification sections)* - Equipment
- 1.03 References and related standards:  
A. ANSI/AWWA F101 - Contact molded, Fiberglass-Reinforced Plastic Wash Water Troughs  
B. ASTM D 256 - Standard Test Method for Determining Pendulum Impact Resistance of Notched Specimens of Plastic  
C. ASTM D 638 - Standard Test Method for Determining Tensile Properties of Plastic  
D. ASTM D 790 - Standard Test Method for Determining Flexural Properties of Plastic  
E. ASTM D 2583 - Standard Test Method for Determining the Surface Hardness of Plastic using a Barcol Instrument  
F. ASTM D 648 - Standard Test Method for Determining the Distortion of Plastic under controlled Exposure to Elevated Temperatures
- 1.04 Submittals:  
A. Comply with General Conditions of the Project Documents  
B. Product data to include:  
1. Type, Product Name and Resin Manufacturer  
2. Test results of fiberglass laminate used

- C. Shop Drawing showing all critical dimensions of Enclosure
- D. Shop Drawing showing location and plan of all Enclosure options
- E. Complete off loading, storage and installation instructions

1.05 Delivery, Off Loading and Storage

- A. Off load structure according to manufacture's instructions
- B. Inspect structure completely and report any damage during shipping
- C. Store structure on level, firm ground or platform and protect from construction traffic and damage.

**PART TWO: PRODUCT**

2.01 Products:

- A. Provide ENDURO Model 100 as manufactured by Virtual Polymer Compounds, LLC of 10478 Ridge Road, Medina, NY 14103; Tel. (585)735-9668.
- B. Request for substitution will be considered only if submitted and approved in advance of bid date. Substitution requests must include evidence that the product meets all standards submitted herein, that the manufacturer has ten years of experience fabricating the product, and there is a complete quality assurance program in place, such as ISO 9001.
- C. Substitution not submitted in and approved by bid date will not be considered.

2.02 Material of Construction:

- A. Gel Coat: All exposed surfaces will be smooth with a 20 mil polyester based gel coat. Color of the gel coat is beige. *(Optional: Other colors available upon request.)*
- B. Structural laminate will be nominal 1/4 inch thick. It will be a composite of 30% by weight chopped strand glass fiber mat and high grade polyester resin.  
*(Enclosures can be fabricated from high grade vinyl ester chemical resident resins selected to meet special industrial application. Typically in this application gel coat is omitted. Contact Manufacturer for more information.)*
- C. The resin will meet the following standards:
  - 1. Tensile Strength                      ASTM D 638    14,000 psi
  - 2. Flexural Strength                     ASTM D 790    25,000 psi
  - 3. Flexural Modulus                     ASTM D 790    1,000,000 psi
  - 4. Impact, Notched                     ASTM D 256    10 ft-lbs/1
  - 5. Barcol Hardness                     ASTM D 2583 40
  - 6. High Temperature Limit             150°F
  - 7. Chemical Resistance                ANSI/AWWAF 10 Type II

2.03 Method of Construction: Single piece contact molded fiberglass reinforced plastic with integral 1.9 pound density foam insulation core.

2.04 Metallic mounting hardware is to be 304 grade stainless steel.

2.05 The Enclosure is to include the following standards options:

- A. Fiberglass insulated door with an opening size of 27.5 inches wide by 44 inches tall
- B. Door hardware is to include two fixed pin hinges and a lockable, keyed handle
- C. Fiberglass insulated, hood (roof) that lifts to provide full access to the enclosure
- D. Hood hardware to include two fixed pin stainless steel hinges, two point latch with keyed lockable handle (keyed same as door) and stainless steel bar to hold cover in open position.

- E. Provide two screened, fixed louver vent covers over two vent openings at both the right and left side of the unit. The vents will be located at the top of the wall.
- F. *(Optional Feature)* The unit will be fabricated with an integral fiberglass floor that is 3/8 inch thick with a slip resistant gray finish. The floor will be integral to the wall sections to provide full spill containment.
- G. 1 inch Polyurethane insulation core (R=7) *(Greater thickness and R Value available as an option)*
- H. Continuous 3 inch wide fiberglass exterior mounting flange with the same finish as the balance of the unit.
- I. *(Optional Feature)* Equipment mounting board to be laminated to the *(specify the location and size)*
- J. *(Optional Feature)* 110 Volt, 60-Watt incandescent light with switch mounted on the left sidewall near the door handle. *(Optional exterior light switch and/or door activated switch is available)*
- K. *(Optional Feature)* Ventilation Fan (110 Volt, 60 CFM) with remote thermostat.
- L. *(Optional Feature)* Base Board, 110 Volt, 500-Watt electric heater with integral thermostat. *(Other types and sizes available)*
- M. 110 Volt, 20 amp GFI protected Duplex Outlet standard 15 amp duplex
- N. All wire will be run through 1/2 flexible sealed PVC flexible conduit
- O. All wiring will be completed with #12 solid copper
- P. *(Optional Feature)* 110/220 Volt load center with 100 amp main and four (4) 20-amp single breakers. *(Optional NEMA 3 and 4 type center can be provided.) (Optional interior Power connection Junction Box can be provided.)*
- Q. *(Interior or Exterior Optional Feature)* Power connection Junction Box.
- R. *(Optional Feature)* 12 in x 12 in window in door

### **PART THREE: EXECUTION**

- 3.01 Carefully remove structure from original crating only at the time of installation. Examine the unit completely and report any damage to the unit prior to installation.
- 3.02 Verify that the dimensions of the concrete slab (foundation) designated for installation are correct and suitable for installation. Report any anticipated problems at once.
- 3.03 Installation:
  - A. Install according to installation instructions provided by the manufacturer.
  - B. Ensure the structure is set plum, true and level.
  - C. Fasten to foundation using specified fasteners at specified spacing.
  - D. Connect to power from protected circuit.

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